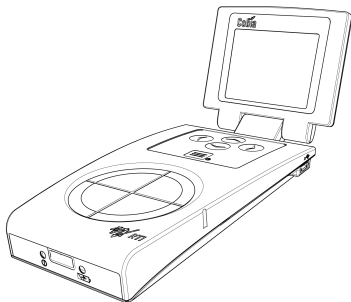


User Manual

Cobia Smart R/F & Cobia Dental Intraoral
English - v2015.1A



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User Manual Downloads

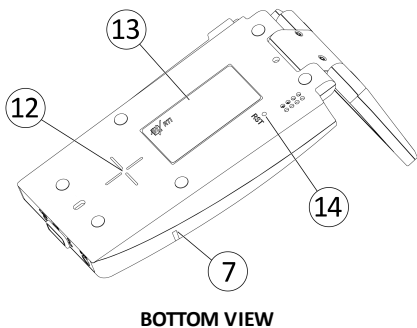
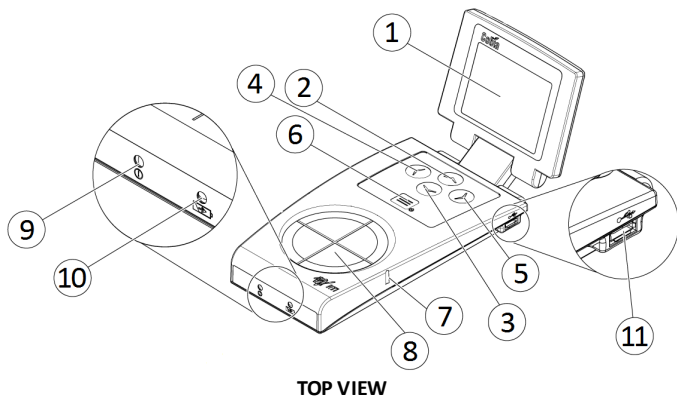
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

www.rti.se/downloads

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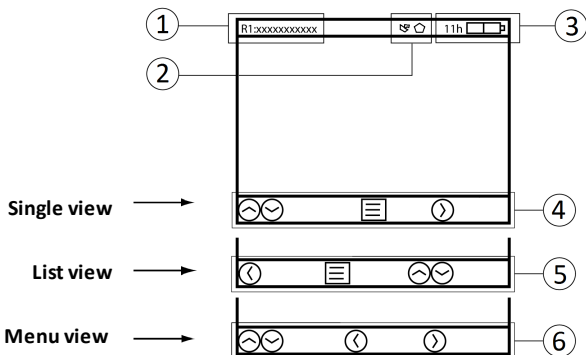
1 Product Overview



#	Name	Description
1	Display	Cobia display. See section <i>Screen Description</i>  6
2	Up arrow button	Used to move up in the user interface. See section <i>Keyboard Operation</i>  8
3	Down arrow button	Used to move down in the user interface. See section <i>Keyboard Operation</i>  8
4	Left arrow button	Used to move left/back in the user interface. See section <i>Keyboard Operation</i>  9
5	Right arrow button	Used to move right or make a selection in the user interface. See section <i>Keyboard Operation</i>  8
6	Menu and On/Off button	Used to start and power off the Cobia, and display the system menu. See section <i>Keyboard Operation</i>  8
7	Positioning marker	Marks the depth of the radiation measurement surface
8	Measurement surface	Circular entrance surface for the measurement sensors
9	Status indicator	Indicates functional status of the Cobia
10	Battery charging indicator	The orange battery charging indicator is lit when the battery is charging. See section <i>Battery Charging Details</i>  13
11	Micro-USB connector	Used both to charge and to connect the Cobia to a computer for system updates. See sections <i>Charging the Battery</i>  9 and <i>Updating the System</i>  11
12	Measurement center marking	Marks the center position of the radiation measurement on the bottom side
13	Product label	Displays detailed information about the product and model (on the bottom side)
14	Reset hole	Used to do a hardware reset of the Cobia. Marked "RST"(on the bottom side)

1.1 User Interface

1.1.1 Screen Description



A status field is displayed at the top of the screen. The left side of the field shows the Radiation or Measurement Quality Code and a description of the active range (1). The middle part of the field displays icons for when power is supplied and when an external detector and/or internal MAS cable is attached as well as warning symbols for when any settings are set to non-standard values (2). The right side of the field displays an icon for external power supply and an indicator for the battery level (3).

A simple user guide is displayed at the bottom of the screen. For each view, the buttons that are functional in this view are shown, together with a short text describing the function of the buttons (4-6).



Single view

In the Single view, only one active parameter is displayed, represented by the value and its unit. Each unit is shown by a specific color. Pressing the up/down arrow buttons will change the active parameter.

When using an external detector (EXT), a corresponding indicator will appear in the

leftmost side of the unit field (not shown).

Note! The shown parameters may vary depending on the model of the

Cobia. The example picture shows a tube voltage measurement with Cobia Flex R/F kV & Dose.

Located to the left of the value, two symbols may be visible:



1. A play symbol (triangle) is visible during the measurement. It is filled (green) during the radiation detection, and will then stay contoured while the Cobia accepts continued measurement during Restart Delay.



1B. When using the optional parameter cycling, a rotating indicator will appear just above the play symbol when the cycling is in progress.



2. A pulse indicator is shown below the play symbol. This indicator is turned on when pulses are detected, resulting in the display of additional pulse parameters.



List view

In the List view, all the available parameters are shown simultaneously. The active parameter (displayed in the Single view) is indicated in color.

If a measurement is started when the Cobia is in the List view, the display will switch to the Single view during the measurement

and then return to the List view after completion.

Note! The available parameters may vary depending on the model of the Cobia. The example picture shows a pulsed measurement with Cobia Flex R/F kV & Dose.



Main Menu view

The Menu view displays a set of available functions, selected by pressing the right arrow button. *Reset Measurement* zeroes and resets the measurement. *Prev. Measurements* recalls the results of earlier measurements. *Settings* is for viewing and modifying the measurement settings. *Preferences* is for

viewing and adjusting personal preferences. Any setting change that can affect the measurement results will be shown in the status field (top of screen). *System Info* gives detailed information about the Cobia, needed during support. *Power Off* turns the Cobia off.

1.1.2 Keyboard Operation

1



Menu and On/Off button

If Power = Off: Press once to start the Cobia

If Power = On: Press once to display the menu. Press and hold to switch off the Cobia

In Menu view: Closes the menu

2-3



Up and Down arrow buttons

In Single view: Changes the active parameter shown

In List view: Changes the highlighted (active) parameter

In Menu view: Moves the marker

4



Right arrow button

In Single view: Switches the display to the List view

In Menu view: Activates the marked menu item

In the Settings or Preferences menus: Changes the set value (displayed in yellow) or activates the menu item

5




Left arrow button

In List view: Switches the display back to the Single view

In Menu view: switches the display back to the previous menu or screen

2 Getting Started

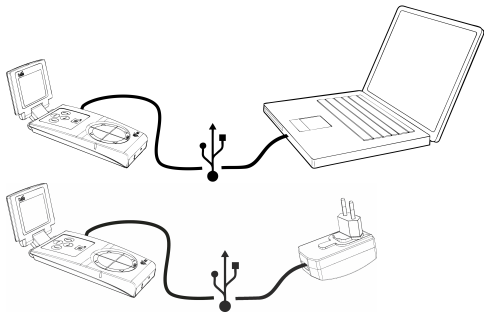
2.1 Before Starting the Cobia for the First Time

Before using the Cobia for the first time, make sure the unit is charged. See *Charging the Battery*  9 .

2.2 Charging the Battery

The battery can be charged in two ways:

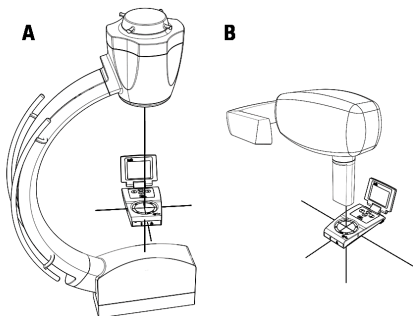
- Via the USB cable connected to a PC.
- Via the USB cable connected to the included external charger.



3 Performing a Measurement

3.1 Measuring with the Internal Detector

The pictures below show how to position the Cobia in different types of X-ray units.



A = Radiography X-ray unit

B = Dental X-ray unit

1. Start the X-ray unit.
2. Prepare the X-ray unit for the testing of desired settings.
3. Start the Cobia.
4. Place the Cobia under the X-ray source at a clinically relevant distance (typically 50 - 100 cm from the source).
5. Make sure that the radiation field covers (at least) the entire Cobia detector surface.
6. Start an exposure.
7. When the measurement is over, the recorded values are by default cycled on the Cobia display. Press the right arrow button to go to the List view for an overview.
8. Compare the parameters displayed by the Cobia with the test settings for the X-ray unit.
9. Record the results.
10. To repeat, adjust the settings and start over from Step 6.

4 Maintenance

4.1 Scheduled Calibration

RTI recommends that the Cobia is calibrated every 24 months. Send your Cobia to your local RTI distributor, who will send it to our service department in Mölndal, Sweden, or New Jersey, USA. For contact details, please see the back of this manual or the list of local RTI distributors on the RTI website (www.rti.se).

4.2 Updating the System

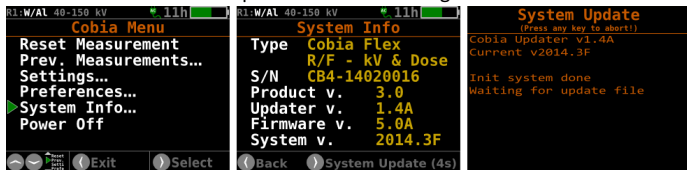
The Cobia system update can easily be done on any computer with support for USB memories.

Below is a step-by-step guide for when using a computer with Windows OS, but the procedure can be done on a computer with any OS, just as long as it has a USB port.

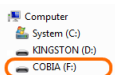
1. Start by downloading the latest versions from www.rti.se/downloads, using a web browser.
2. On a Windows PC, start a File Explorer window (WIN+E) and unpack the downloaded Cobia Update zip file to a local drive.
3. Start the Cobia and connect the cable between the PC and the Cobia.
4. On the Cobia, press the menu button and enter the "System Info" menu.

Note! Make sure that the update file contains a newer system version than already present in the system.

5. If so, press and hold down the right arrow button for approximately 4 seconds to start the update mode. See images below.



6. After a short while, a USB memory device named COBIA (as shown below) will appear in the File Explorer on the PC, and the Cobia display will show "Waiting for update file". Now, drag-and-drop the unpacked updater file (.cobia) from the PC local drive using the File Explorer to the USB device named COBIA.



7. A counter will now start on the Cobia display during the resource file update procedure. It will take a few minutes. When the update is completed the following screen will appear:

```
System Update
(Press any key to abort!)
Cobia Updater v1.4A
Current v2013.1A (FW4.0B)

Init system done
Updated 377 res. done
Programming FW done

Update successful!
Updated v2014.3F (FW5.0A)
Press any key to restart!
```


8. Press any key to launch the updated Cobia firmware.

After the update, you may want to change the language of the Cobia user interface. You will find this setting by pressing the menu button, and then selecting User Preferences.

5 Technical Data

5.1 Battery Charging Details

The section *Charging the Battery*⁹ describes how the Cobia battery is charged.

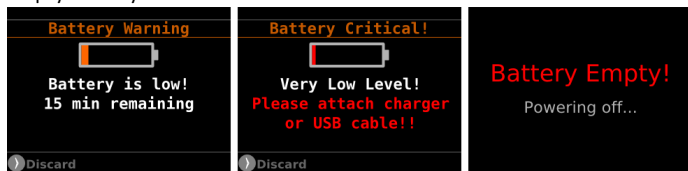
On the front face of the Cobia, there is an orange battery charging indicator, marked . The indicator is lit when the battery is actively charging. It will gradually turn off when the battery is getting closer to being fully charged. Charging is also possible when the Cobia is powered off.

Approximate battery running and charging times:

Capacity	Running time	Charging times (from empty)		
		Using Power supply	USB, Cobia ON	USB, Cobia OFF
50 %	7½ h	1½ h (90 min)	3½ h	17 h
80 %	12 h	2½ h (150 min)	6 h	27 h
90 %	13½ h	3¼ h (195 min)	7 h	30 h
100 %	15 h	5 h (300 min)	8½ h	32 h

5.2 Battery Warnings

Warnings are shown when the battery is starting to run low (see below). After the second warning, the system can suddenly shut down due to an empty battery.



6 Troubleshooting

If you experience any problems with the Cobia, please go through the following steps before contacting your local RTI distributor or RTI Electronics:

- A. Check the RTI website for system updates (www.rti.se).
- B. Go through the checklist below.

The Cobia does not start:

If the Cobia does not start, try the following: Connect the charger and retry starting the Cobia. If it does start, then the battery was too low to start. If this does not help, try resetting the Cobia as described below.

The Cobia indicates a dose lower than anticipated:

If the dose readings are too low or if the irradiation times for short exposures are too short, check that the measurement is performed so that the radiation is perpendicular to the Cobia detector surface. Please also make sure that the entire surface is evenly irradiated.

The Cobia gives "Field Error":

The Cobia detector surface needs to be properly irradiated. Please make sure that the entire surface is irradiated, and that nothing is blocking the radiation.

How do I reset the Cobia?

There is a reset hole on the bottom face of the Cobia, marked RST. Insert the end of a paper clip or similar to reset the Cobia.

7 Standards and Compliances

For standards and compliances, see the Reference Manual.

7.1 Intended Use of the Cobia

Accessory to diagnostic X-ray equipment to be used as an electrometer. Together with external probes it is to be used for independent service and quality control, as well as measurements of kerma, kerma rate, kerma length product, kVp, tube current, exposure time, luminance, and illuminance within limitations stated below.

If installed according to accompanying documents, the product is intended to be used together with all diagnostic X-ray equipment except for:

- therapeutical X-ray sources.
- X-ray equipment with tube potential below 18 kV.
- X-ray equipment on which the instrument cannot be mounted properly, e.g. equipment where the beam field size is narrower than the active part of the detector.
- specific types of X-ray equipment listed in the instructions for use or in additional information from the manufacturer.

With the X-ray installation in stand-by conditions without patients present, the product is intended to be used:

- to provide the operator with information on radiation beam parameters that might influence further steps in an examination but not an ongoing exposure.
- for assessing the performance of the X-ray equipment.
- for evaluation of examination techniques and procedures.
- for service and maintenance measurements.
- for quality control measurements.
- for educational purposes, authority supervision etc.

The product is intended to be used by hospital physicists, X-ray engineers, manufacturer's service teams, and other professionals with similar tasks and competencies. The operator needs a short training to be able to use the product as intended. This training can be achieved either by careful study of the manual, studies of the built-in help function in measurement software or, on request, in a short course ordered from the manufacturer.

The product is intended to be used inside X-ray rooms ready for clinical use and can safely be left switched on and in any measuring mode in the

vicinity of patients.

The product is **NOT** intended to be used:

- for direct control of diagnostic X-ray equipment performance during irradiation of a patient.
- so that patients or other unqualified persons can change settings of operating parameters during and immediately before and after measurements.

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